**Title:** Massage therapy reduces chronic non-specific low back pain (LBP) and helps a single parent attorney return to favored active pursuits: A case report

**Introduction:**

Low back pain is an important societal problem with significant costs. Up to 70–85% of the population in industrialized societies experience low back pain at least once in their lifetime, with point prevalence of about 30%. The total cost of low back pain has been estimated to exceed 50 billion dollars per year in the USA.
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3489327/

From the American Massage Therapy Association (AMTA) website:

According to the National Institute of Neurological Disorders and Stroke, "Americans spend at least $50 billion each year on low back pain, the most common cause of job-related disability and a leading contributor to missed work. Back pain is the second most common neurological ailment in the United States."

According to a definition of LBP from Wikipedia **Low back pain** or **lumbago** is a common disorder involving the muscles and bones of the back. It affects about 40% of people at some point in their lives. Low back pain (often abbreviated as LBP) may be classified by duration as acute (pain lasting less than 6 weeks), sub-chronic (6 to 12 weeks), or chronic (more than 12 weeks). The condition may be further classified by the underlying cause as mechanical, non-mechanical, or referred pain.

The House of Delegates of the American Massage Therapy Association approved the following position statement regarding the effectiveness of massage therapy in treatment of LBP at its October 2012 national convention. The AMTA statement as copied from the organization's website reads as follows:

**It is the position of the American Massage Therapy Association (AMTA) that massage therapy can be effective in reducing low back pain.**

The position statement cites eleven research studies supporting it. The studies, appended to this report, vary in objectives, methods, design, interventions, results and conclusions. The AMTA delegates concluded based on the body of research that massage can:

- decrease low back pain
- decrease disability associated with low back pain
- demonstrate decreased pain and disability over time
- decrease anxiety/depression associated with low back pain

A synopsis of one of the studies that seems particularly relevant to the patient's case is presented here. It was a 2001 study by Hernandez-Reif, M., Field, T., Krasnegor, J., Theakston, H. published in the International Journal of Neuroscience, 106(3-4):131-45. It used a randomized between-groups design that evaluated massage therapy versus relaxation for chronic low back pain. Treatment effects were evaluated for reducing pain, depression, anxiety and stress

hormones, and sleeplessness and for improving trunk range of motion associated with chronic low back pain. Twenty-four adults (M age=39.6 years) with low back pain of nociceptive origin with a duration of at least 6 months participated in the study. The groups did not differ on age, socioeconomic status, ethnicity or gender.

The 24 adults (12 women) with lower back pain were randomly assigned to a massage therapy or a progressive muscle relaxation group. Sessions were 30 minutes long twice a week for five weeks. On the first and last day of the 5-week study participants completed questionnaires, provided a urine sample and were assessed for range of motion. By the end of the study, the massage therapy group, as compared to the relaxation group, reported experiencing less pain, depression, anxiety and improved sleep. They also showed improved trunk and pain flexion performance, and their serotonin and dopamine levels were higher.

The study concluded that massage therapy is effective in reducing pain, stress hormones and symptoms associated with chronic low back pain.

The study is relevant to the case since the mean age in the study is 39.6, includes 12 women and includes reduction of anxiety and stress hormones. The patient is a 39 year old female with a stressful job and active life style as a single parent. As such, stress and hormonal influences may be factors in the patient's LBP presentation.

**The Case**

The patient is a 39 year old female. She is 5'2" tall with proportional weight. She is a single parent with a stressful occupation as a corporate attorney. She spends a lot of her working time sitting at a computer. She has taken Pilates classes to strengthen the core musculature, enjoys golf and gardening. Her pain started about 5 years previous to seeking treatment from no obvious cause. The pain intensified during the past year which prompted her to seek treatment options.

She was referred by her physician to physical therapy in April 2013. The physician's diagnosis was lumbago with lumbar lordosis. The physical therapist evaluated the patient. Among the PT's findings were:

- muscle imbalances with increased tone at the R lumbar musculature
- decrease in trunk ROM in all directions especially L rotation and side bending
- weak hip musculature on the R and compensates with trunk rotation R with hip flexion
- short hip flexors on R and limited hip IR ROM B
- stands with trunk shifted
- ambulates with positive Trendelenburg B and increase in pelvic rotation
- significant tightness of the R lumbar musculature with significant tenderness

The physical therapist instructed patient in lower abdominal and hip strengthening exercises and referred the patient to me for soft tissue treatment as an adjunct to PT. The patient discontinued PT after initiating massage therapy treatments because she felt she had gotten all she needed from PT to aid her recovery. Patient sleeps on her side. Her goals are pain elimination and a return to playing golf and to gardening.

To date, I have provided 6 massage therapy treatments. The initial treatment was on 5/17/13. She came for a total of 4 initial treatment sessions within about a 2 month period after which she reported a decrease in LBP and would return for maintenance treatments as needed.

**First session:**

During the initial history interview, the patient stated that the pain is worse upon waking in the morning. Stretching decreases the pain. Sitting increases it and she spends much of her working hours sitting at a computer. She described the pain as low level dull pain across the length of the posterior pelvic crest.

The patient's PT suggested that I treat the hip flexor muscles with massage. Although there was apparent tenderness and shortness especially in the R psoas, the work that most closely replicated the patient's pain was friction and compression applied to the sacral multifidi muscle. Using the forward flexion multifidi test after the treatment did indicate stiffness, suggesting the need for continued treatment of this muscle in future sessions. After the initial session, the treatment plan included lengthening of lumbar erector muscles, including erector spinae and multifidi. Also the iliolumbar ligament was identified for treatment. Continuing monitoring of the hip flexor muscles was also considered needed.

**Second session:**

The patient returned to the clinic two weeks later for a second session and reported a decrease in LBP after the initial session. Testing of the QL muscles indicated stiffness and restricted rotation in the R QL. The travel distance of spinal flexion and lateral flexion were measured before and after treatment. The spinal travel distance improved by ½ inch, the lateral by 1 inch after treatment. Multifidi test showed less stiffness than before treatment.

Soft tissues treated in the session were the erector spinae, multifidi, iliolumbar ligament and the abdominal oblique muscles bilaterally.

**Third session:**

The patient returned to the clinic 3 weeks later and complained of pain in the R PSIS and between the R PSIS and the lumbar spine after sleeping on the ground at a camping outing. Her R PSIS tested positive for SIJ hypomobility using the stork and flexion tests. The PSIS tested negative for Gaenslen's sign and Erichson's test. Multifidi test was not significant this time. There was no leg length discrepancy measured. The patient was able to manage pain on the outing by stretching and exercise.

For this treatment due to SIJ stiffness, I started with pelvic decompression myofascial release work. Then focused on release of tension in pelvic crest soft tissue structures and hip rotators, especially R. As in previous sessions, the iliolumbar ligament and the multifidi were tender and replicated the patient's pain.

Despite the setback in terms of pain after the camping outing, the patient expressed confidence in the effect of the treatments and wants to try playing golf soon.

**Fourth session:**

It was 5 weeks until the patient returned for a fourth massage treatment session. In the time interval between sessions, the patient again described experiencing periods of diffuse lumbar-pelvic pain. Despite the report of continuing pain symptome, the patient stated her pain level was much reduced since the initial session 2 months prior.

At this session, I broadened the scope of the treatment to include work on the latissimus dorsi muscle, the abdominal obliques, the quadratus lumborum and the serratus posterior inferior muscle. I continued to lengthen the lumbar extensors.

At the end of this session the patient expressed satisfaction with the results of the 4 initial treatments and felt she would return for occasional maintenance sessions.

**First Maintenance Session:**

The patient returned for more treatments after experiencing a flare-up of LBP she associated with job stress and an active vacation backpacking. At this session, the center of pain was identified as being at the L5-S1 articulation again indicating the probable involvement of the iliolumbar ligament. I examined the patient's hip alignment and found a slight obliquity L and a slight R ASIS anterior rotation. The PSIS landmarks were even and the adductor ROM normal.

Besides treating the symptomatic iliolumbar ligament, I treated the gluteus medius muscles, especially the lower hip R side to alleviate obliquity. And treated the QL and abdominal obliques on the high hip L. Also decompressed stiff lumbar extensors.

**Second Maintenance Session:**

At the next session, I assessed patient's hips again and this time the obliquity appeared to be on the R. I also noted a slight spinal deviation L in the lumbar region. Spinal rotation to the left greater than to the R. The pheasant test, Ely's test and QL test were all negative, but the R rectus femoris tested stiff.

To treat I used compression to treat the lumbar spinal rotators, treated R erector spinae especially stiff, stringy pars lumbar lumborum, released B hip flexors and diaphragm as well as sacral and lumbar multifidi B.

**What I've Learned**

My experience assessing and treating the patient's form and function presentations has been challenging and at times frustrating because of the absence of a clear cause of the LBP. Each time I treated her, there seemed to be different possible perpetuating factor for the LBP. It seems the patient will need to continue to use massage therapy to aid in management of her condition. The positive side of it is that the massage treatments have helped reduce her pain and she has returned to playing golf pain-free.

The patient is aware of the possible negative effects of job and life stress that contribute to her LBP. She knows it's important to take breaks and move from her chair at work and she continues to do the core strengthening exercises from physical therapy.